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THE HAMILTON COUNTY EXPERIMENT FARM

SECOND ANNUAL REPORT, FOR THE YEAR 1913

At the November election in 1911 the citizens of Hamilton County voted in favor of establishing a county experiment farm, and the following March the Board of County Commissioners and the Board of Control of the Ohio Experiment Station selected for that purpose a farm of 216 acres, lying on the west side of the Cincinnati and Hamilton turnpike and electric railways, about four miles north of Mt. Healthy.

As stated in Bulletin 241, which constitutes the first annual report on this farm, the following general plan for the management of the farm was submitted to and approved by the County Agricultural Society:

THE HAMILTON COUNTY EXPERIMENT FARM

PROPOSED PLAN OF MANAGEMENT

The statistics collected by the township assessors in Hamilton county for the year 1910 show that in that year about 54,000 acres were devoted to the production of grains and hay, the produce of which, at current market prices, would have had a total value of about $800,000; about 42,000 acres were pasture, having a rental value of approximately $200,000; about 7,700 acres were in truck crops (not including market garden crops) producing an estimated value of $290,000; 2,200 acres were in orchard fruits, yielding about $19,000 in value, and 430 acres were in grapes and small fruits, producing nearly $32,000 in value.

These values are of course mere estimates but they serve to show in a general way the trend ot the agrieulture of the county. It will be observed that the yields given for the tree fruits are extremely low, but it appears from the statistics of previous years that these figures fairly represent recent conditions. In the aggregate the figures show that about 90 percent of the total area in farms

is devoted to field crops, and about 10 percent to truck crops and fruits, but the value of the truck crops and fruits amounts to nearly 30 percent of the total value of all produce.

A large part of the field produce is converted into animal products, as shown below:

TABLE I. Animal products sold and estimated value. Hamilton county, 1910

Item	Quantity	Value per unit	Total value
Milk	1,838,295 gals.	$ 0.14	$257,357
Butter	845,557 lbs.	0.27½	232,503
Cheese	23,030 lbs.	0.15	3,452
Eggs	555,482 doz.	0.20	111,096
Wool	4,664 lbs.	0.25	1,166
Beef cattle, No.	272	75.00	20,400
Hogs, No.	5,000	20.00	100,000
Total	.....	.....	$725,974

This statement shows that dairying is, as it should be, a leading industry in Hamilton county, the total sales of dairy products amounting to nearly half a million dollars.

If we had data showing the sales of poultry it is probable that the total revenue from poultry and eggs would amount to at least $200,000, thus bringing this industry into a still more important relative position than the figures indicate.

The prominence given to dairying in Hamilton county would justify the expectation of an increase in crop yields, provided the manure were carefully saved and utilized. The actual outcome is shown by the next table, exhibiting the average yields per acre of corn and wheat in Hamilton and adjoining counties by 10-year periods since 1850:

TABLE II. Average yields in bushels per acre by 10-year periods

Period	Hamilton	Butler	Warren	Clermont
		Corn		
1850-59	38.2	41.1	40.4	33.3
1860-69	37.0	39.2	37.4	28.8
1870-79	36.4	42.3	40.9	30.0
1880-89	33.3	38.5	36.8	26.6
1890-99	30.6	35.1	35.1	25.5
1900-09	33.1	37.8	35.7	24.8
		Wheat		
1850-59	14.7	15.0	14.7	11.8
1860-69	10.7	12.1	11.6	8.8
1870-79	12.8	12.9	13.0	10.2
1880-89	13.7	12.9	12.0	8.9
1890-99	14.2	16.5	13.8	9.9
1900-09	15.9	15.6	13.9	11.1

The table shows a steady decline in the yield of corn for 50 years in all the counties, followed by a slight reaction during the last 10 years in all the counties except Clermont. In relative yield of corn Hamilton stands third.

The yield of wheat fell to its lowest point during the sixties, since which period it has been slowly rising. In relative yield of wheat, Hamilton stands a little higher than any of the other counties during the last period.

How far the crop yields of this region are short of possible attainment is shown by the results of the work at the experiment farm at Germantown, Montgomery county, where the following yields have been harvested as an average for the 8-year period, 1894-1911 inclusive:

TABLE III. Eight-year average yields at Germantown Test Farm. Corn, wheat and clover grown in 3-year rotation

Treatment	Corn bus.	Wheat bus.	Clover lbs.
No fertilizer	44.0	9.7	2,405
Fertilized	60.9	20.1	2,669
Increase from fertilizer	16.9	10.4	1,264
Value of increase	$ 8.45	$ 9.36	$5.05
Cost of fertilizer	4.80	4.80	.....
Net gain	3.65	4.56	5.05

The fertilizer, costing $9.60 for each rotation, is equally divided between the corn and wheat. The resulting increase has a total value for each rotation of more than $13.00 per acre in excess of the cost of the fertilizer, or about $4.40 per acre per annum. Such an increase in value of product on the 54,000 acres given to grains, meadow and clover in Hamilton county would amount to nearly a quarter of a million dollars annually.

In the light of this brief survey of the agriculture of Hamilton county it would seem that the work of the County Experiment Farm should be planned with a view to increasing the productiveness of the soil by systematic drainage, rotation, manuring and fertilizing; to increasing the returns from the dairy through improvement in the cow by careful breeding and selection, and improvement in the ration by better adaptation to its purpose; to increasing the returns from the poultry yard through breeding and feeding for special purposes; and to improvement in the production and quality of truck and fruit crops by selection of varieties adapted to the soil and climatic conditions of the county and by experiments in methods of management.

In the execution of this work it is proposed to devote about 20 acres of the farm to plot experiments in crop rotation with the use of fertilizers and manures, planned to articulate with those in progress at the Central Station and other district and county experiment farms. It will be necessary to use carefully selected land for this work and to thoroughly drain it with tile drains. An equal or larger area will be given to truck and fruit crops, including both small and large fruits, and the remainder of the tillable land will be devoted to a systematic rotation of field crops, grown to demonstrate in a larger way the effect of the small-plot treatment.

Because of the proximity of a great city, which has been taxed for the establishment of the experiment farm, it would seem obligatory that the work of the farm should be planned with the needs of the city in mind, than which there is none greater than a daily supply of pure milk; and therefore the production of such milk should occupy a leading place on the Hamilton County Experimcnt Farm.

It is therefore recommended that, after setting aside certain portions of the experiment farm for the purposes above mentioned and for poultry husbandry, the remainder of the farm be conducted primarily as a dairy farm, the cropping being planned for the most economical production of milk.

The increase of tuberculosis among dairy cattle during recent years has greatly complicated the problem of maintaining a dairy herd. It is no longer practicable to keep up such a herd by indiscriminate purchase, for such a practice is certain, sooner or later, to bring in this disease. The experience of the Ohio and Wisconsin Experiment Stations has demonstrated the practicability of building up and maintaining a sound herd of cattle, even on a tuberculous foundation, and has shown that after such a herd is established the only sure way to maintain it is by avoiding the introduction into the herd of infected animals. Moreover, general experience has shown that the only way to secure a herd of high productiveness is by selecting the best milkers and breeding from them. It is proposed, therefore, to purchase a few cows of the best strains attainable and to keep the heifer calves until they can be tested as milkers, the cows and their produce to be used in experiments designed to improve the general character of the herd by eliminating inferior animals, and to increase the products by improvements in the ration.

Incidental to the production of milk will be the production, care and use of animal manure, and it is hoped that work may be accomplished along this line that will be of value to the farmers of the county.

This tract is divided into two farms by the Pippin Road; the farm fronting the railway and turnpike containing 105 acres and the rear farm 111. Work was immediately begun in preparing the farm for its purpose. On the front farm the dwelling has been enlarged, so as to furnish an office room, and the barns have been re-arranged and repaired and a poultry house built. The small dwelling on the rear farm has been re-roofed, painted and otherwise repaired, and the barn on this farm has been enlarged to more than double its original size and a silo and a manure shed have been added. An orchard of about 12 acres has been planted and a grove has been planted at the front entrance.

The most important improvement has been the inauguration of a thorough system of tile drainage. The subsoil of this farm is a stiff clay and the land remains wet so late in the spring that it is impossible to get the crops planted in proper season. This condition prevails over the larger part of the State, and on all the experiment farms thus far selected. A traction ditching machine was purchased by the Experiment Station in the spring of 1912 and has since been kept steadily employed, whenever the soil conditions would permit, but as several farms were needing drainage at the same time it was not possible to confine its work to the Hamilton county farm. However, nearly 12 miles of drain have thus far been laid in that farm, which is probably somewhat less than half the total amount that will be required to put it in proper condition.

There is probably no greater source of wasted energy on the farms of Ohio than the attempt to cultivate land that cannot possibly yield a full crop because of lack of drainage, but whatever excuse may be offered for neglect of drainage on the ordinary farm, there can be none in the case of a farm intended to serve as a guide to farmers in the use of fertilizers and the selection of systems of rotation; for the differences in water supply or in the condition of the soil, caused by excess of water, may cause greater differences in the yield of crops than any that can be produced by rotation, manuring or fertilizing.

Of necessity, therefore, the summer of 1912 was given to drainage. The land selected for beginning this work was that set apart for orchards, and the field fronting the turnpike and traction line, intended for experiments in the maintenance of soil fertility. After these tracts were drained the work was extended to the south field which was thoroughly drained. This field of 25 acres, the wettest one on the farm, was idle when the farm was purchased and no attempt was made to cultivate it until it could be drained. The produce of the small part of the farm cultivated in 1912 was chiefly required for the support of the teams, and that produced in 1913 was stored in the barns and silo for the support of the teams and the feeding of 16 steers, which were purchased in the fall and are being fed for the June market. It is proposed to convert the proceeds of these steers into dairy stock, and it is expected that the farm will begin to show a larger income in 1914; but it should be understood that the function of an experiment farm is not the production of revenue, but the demonstration of better methods. To accomplish this purpose the inferior methods must be contrasted with the superior as when, for example, in fertility tests, one-third of the land is left continuously without manure or fertilizer.

WORK IN PROGRESS

In addition to the preparatory work of building and draining, about twelve acres of orchard have been planted, including 250 apple trees planted for cultural and fertilizer experiments; 130 apple trees of 65 varieties planted for comparison of varieties; 50 pear trees of 21 varieties and 30 plum trees of 11 varieties.

For study of field crop problems two ranges, of 52 one-tenth acre plots each, and a third range of 39 one-twentieth acre plots, have been laid out in the front field of the farm, one range of one-tenth acre plots for fertility studies and the other for variety tests with cereal crops, and the smaller plots for a rotation of potatoes, wheat and clover. The plots are arranged in blocks of 13 plots each, roadways being left between the blocks to render each block accessible independently of the others.

SOIL FERTILITY

For the fertility studies with cereals a rotation of corn, soybeans, wheat and clover has been started, each crop to be grown every season, the plan of fertilizing being as shown in Table IV:

TABLE IV: Plan of fertilizing in corn-soybeans-wheat-clover rotation, Hamilton County Experiment Farm.

Plot No.	Treatment	Pounds per acre on: Corn	Soybeans	Wheat	Plot No.
1	No treatment	...	...	...	1
2	Acid phosphate	200	100	200	2
3	Acid phosphate Muriate of potash	200 50	100 20	200 20	3
4	No treatment	...	...	...	4
5	Acid phosphate Muriate of potash Nitrate of soda	200 50 50	100 20 30	200 20 80	5
6	Yard manure, untreated	5 tons	...	5 tons	6
7	No treatment	.....	...	.....	7
8	Shed manure, untreated	5 tons	...	5 tons	8
9	Shed manure, phosphated	5 tons	...	5 tons	9
10	No treatment	.....	...	.....	10
11	Shed manure, phosphated Ground limestone	5 tons 2 tons	... ...	5 tons 2 tons	11
12	Shed manure, phosphated Ground limestone Acid phosphate Muriate of potash Nitrate of soda	5 tons 2 tons	... ...	... ... 200 50 50	12
13	No treatment	.....	...	...	13

Note: The fertilizers, including the nitrate of soda, to be applied just before planting the crop. The manure to be plowed under for corn, but applied as a top dressing for wheat. The "phosphated" manure to be treated with 40 pounds of acid phosphate per ton of manure, the phosphate to be mixed with the manure before spreading.

Corn was planted in this experiment in the spring of 1913, and the results of the harvest are shown in Table V:

TABLE V: Fertilizers and manure on CORN at the Hamilton County Experiment Farm, 1913. Rotation I—Corn-soybeans-wheat-clover. Block D.

Pl't No.	Treatment	Yield per acre: Grain Bus.	Stover Lbs.	Increase or decrease (—) per acre: Grain Bus.	Stover Lbs.	Value of increase	Cost of treatment	Net gain or loss (—)	Pl't No.
1	None	46.43	3,850	....	...	$....	$....	$....	1
2	Acid phosphate, 200 lbs.	49.43	4,790	3.00	957	2.64	1.60	1.04	2
3	Acid phosphate, 200 lbs. Muriate of potash, 50 lbs	54.14	3,610	7.71	—207	2.77	2.85	—.08	3
4	None	46.43	3,800	....	...	....	....	....	4
5	Acid phosphate, 200 lbs. Muriate of potash, 50 lbs Nitrate of soda, 50 lbs	50.57	3,360	4.28	—283	1.29	4.35	—3.06	5
6	Yard manure, untreated, 5 tons	46.00	3,630	—.14	143	.16	1.25	—1.09	6
7	None	46.00	3,330	....	...	....	....	....	7
8	Shed manure, untreated, 5 tons	45.43	3,670	1.53	427	1.25	1.25	0	8
9	Shed manure, phosphated, 5 tons	49.29	2,900	7.48	—257	2.61	1.25	—1.36	9
10	None	39.71	3,070	....	...	....	....	...	10
11	Shed manure, phosphated, 5 tons Ground limestone, 2 tons	44.43	2,890	5.96	—50	2.31	7.25	—4.94	11
12	Shed manure, phosphated, 5 tons Ground limestone, 2 tons	41.43	3,450	4.19	640	2.64	7.25	—4.61	12
13	None	36.00	2,680	....	...	....	....	....	13

Notes: Plots 11 and 12 receive the same treatment for corn, but for wheat the treatment differs, as shown by Table IV.

In computing the increase or decrease it is assumed that if the yield of two neighboring plots were 30 and 33 bushels, the probable unaided yields of the two plots between would have been 31 and 32 bushels. For a discussion of this method of calculation see Ohio Experiment Station Circular 96, page 31.

The fertilizing materials are valued at $16 per ton for acid phosphate; 2½ cents per pound for muriate of potash; 3 cents per pound for nitrate of soda; $3.00 per ton for ground limestone and 25 cents per ton for manure, to cover the greater cost of applying manure than fertilizers. The actual cost of the manure, as it lies in the barnyard, is left for the farmer to compute.

Table V shows a small and irregular increase from all the applications except on Plot 6. At the computed prices the cost of treatment has in most cases been greater than the value of the increase. This, however, is not an unexpected outcome, as the first application of fertilizers or manure is usually largely absorbed by the soil, and it is not until the treatment is repeated that its full effect is manifest.

It is interesting to compare the yields of corn in the similar fertility test at the Experiment Station in Wayne county, for the first application of fertilizers or manure and for the 20-year average:

TABLE VI: Increase from fertilizers and manure on corn in Wayne county.

Treatment	Bushels per acre	
	From first treatment	20-year average
Acid phosphate	1.65	7.78
Acid phosphate and muriate of potash	4.62	14.40
Acid phosphate, muriate of potash and nitrate of soda	7.35	18.66
Untreated yard manure, 4 tons per acre	5.25	23.78

A still more striking illustration of the necessity for repetition in this work is found in the comparison of the first wheat crop in this Wayne county test, harvested in 1894, with the 20-year average, as shown in Table VII:

TABLE VII: Increase (+) or decrease (−) after fertilizers and manure on wheat in Wayne county.

Treatment	Bushels per acre	
	1894	20-year average
Acid phosphate alone	−2.80	+7.58
Muriate of potash alone	+5.63	+1.01
Nitrate of soda alone	−1.22	+1.87
Acid phosphate and muriate of potash	−1.11	+8.76
Acid phosphate and nitrate of soda	−4.65	+13.17
Acid phosphate, muriate of potash and nitrate of soda	−0.42	+15.93
Untreated yard manure	−0.53	+7.76

Had this season's results been accepted as final the conclusion would have been reached that acid phosphate and nitrate of soda are injurious to wheat and that potassium is the only fertilizing element required by wheat on this soil, a conclusion the very opposite to the truth. Subsequent work has shown that the apparent ill effect from acid phosphate on this crop was due to very unusual seasonal conditions, and that the gain on the land receiving muriate of potash alone was due to some previous treatment, as no such gain has been found on any of the other four tracts of land included in

the experiment. In fact, the 20-year summary shows that phosphorus and nitrogen are the elements most needed in this soil and potassium the one least needed.

VARIETY TESTING

The comparison of varieties of grain and forage crops is made under the supervision of the Department of Agronomy, the report of which follows:

CORN

Nine varieties of corn were tested on the section of 13 plots devoted to this work. In the first column of Table VIII the actual yields of each plot are given. In the second column the pounds of corn stover per acre. It will be noted that every third plot in the test is a "check," or yard stick. Southern Ohio Clarage corn was used for this purpose.

In the third column the several varieties tested are compared with the check plots between which they were grown, and the amount above or below the check yield is indicated by plus or minus. This increase is added to the average yield of all the check plots, while the decrease is subtracted, for the comparative yields given in the fourth column of the table. This same method of determining the comparative yield is used in all the variety tests reported in this bulletin and will not be explained again.

TABLE VIII: Corn in variety test, Hamilton county, 1913

Variety	Actual yield per acre		Increase+ or decrease— Grain	Comparative yields per acre					
	Grain	Stover		Hamilton	Clermont	Miami	Paulding	Germantown	Wooster
	Bus.	Lbs.	Bus.	Bus.	Bus.	Bus.	Bus.	Bus.	Bus.
Check (Clarage)	46.29	2,710	.....	.....	.....	.....	.....	.....	.....
Leaming	46.00	2,070	—3.24	48.99	29.83	48.61	46.44	57.56	87.82
Darke County Mammoth	53.14	2,630	+0.95	53.18	31.73	†53.60	†54.83	61.73	83.76
Check	55.14	2,540	.....	.....	.....	.....	.....	.....	.....
White Cap	53.43	2,560	—.81	51.42	29.69	55.86	.....	57.44	77.02
Cook's 75	58.71	2,740	+5.38	57.61	28.02	57.29	50.79	55.36	81.96
Check	52.43	2,230	.....	.....	.....	.....	.....	.....	.....
Reid (Orcutt)	52.57	3,070	—0.09	52.14	29.30	59.84	45.97	54.07	85.20
Ohio 84	42.71	1,710	—10.22	42.01	.....	47.60	48.54	54.94	81.57
Check	53.16	2,530	.....	.....	.....	.....	.....	.....	.....
Clarage (No. Ohio)	47.86	2,200	—5.63	46.60	.....	59.91	51.50	54.61	79.03
Leaming (Scott)	53.53	3,210	—.38	51.85	28.12	48.53	.....	.....	73.33
Check	54.14	2,960	.....	.....	.....	.....	.....	.....	.....
Average checks	52.23	.....	.....	52.23	28.71	*58.39	*44.76	54.61	79.03

*Darke County Mammoth used as check.
†Darke County Mammoth sent from Station.

For the purpose of comparison the yields of a number of varieties of corn are given as grown the same season in different parts of the state. It will be noted that in Hamilton county, Cook's

75 is first and Darke Co. Mammoth second; in Clermont county, Darke Co. Mammoth is first and Leaming second; in Miami county, Clarage is first and Reid (Orcutt) second; in Paulding county, Darke Co. Mammoth is first and Clarage second; at the Germantown test farm, Darke Co. Mammoth is first and the Leaming second.

The above are only one season's figures and, of course, are not conclusive.

OATS

In the oats test seven varieties were grown, with one of the best varieties of barley which we have found—the Oderbrucker, and Emmer, a plant belonging to the wheat family and sometimes called Speltz. In determining the yield per acre in bushels, 32 pounds per bushel were allowed in the case of oats and emmer, and 48 pounds of barley. This fact should be kept in mind in comparing the yields.

The so-called comparative yields, given in the fourth column and thereafter, are the more reliable. The method of determining them is explained under the corn variety tests.

In the 1913 tests the Silvermine stands first in Hamilton and Hancock counties and second in Clermont and Paulding. The Big Four stands first in Clermont, Miami and Paulding and second in Hamilton county.

The same variety—the Wideawake—was used in all the checks.

TABLE IX: Oats in variety test, Hamilton county, 1913

Variety	Actual yield per acre		Increase (+) or decrease (−)	Comparative yields of grain						
	Grain	Straw		Hamilton	Clermont	Miami	Paulding	Hancock	Wooster	Wooster 6-yr. av.
	Bus.	Lbs.	Bus.	Bus.	Bus.	Bus.	Bus.	Bus.	Bus.	Bus.
Check (Wideawake)...	15.78	1,120	.....	.....	.....	.....	.....	.....	.....	.....
Ohio 7009 (Sixty Day).	17.03	705	+0.83	16.92	.....	44.14	.....	22.65	37.71	66.52
Ohio 6203 (Siberian)...	11.87	820	−4.75	11.34	9.40	60.75	27.87	45.67	49.90	69.55
Check.....	17.03	905	.....	.....	.....	.....	.....	.....	.....	.....
Swedish Select.....	9.06	960	−8.07	8.02	4.61	61.12	26.77	45.56	39.77	56.70
Big Four.....	19.07	790	+1.83	17.93	16.48	62.99	46.30	46.32	41.89	65.50
Check.....	17.34	745	.....	.....	.....	.....	.....	.....	.....	.....
Silver Mine.....	22.50	780	+5.42	21.51	15.13	61.07	38.96	50.26	42.63	65.42
Ohio 6222 (Imp. Amer.).	12.66	795	−4.16	11.93	10.96	51.85	36.93	47.34	43.11	66.18
Check.....	16.56	1,020	.....	.....	.....	.....	.....	.....	.....	.....
Oderbrucker Barley....	8.96	.....	.....	*8.96	.....	.....	.....	.....	14.44	18.92
Emmer.....	6.87	.....	.....	*6.87	.....	62.37	.....	30.00	35.00	18.45
Check.....	13.75	1,010	.....	.....	.....	.....	.....	.....	.....	.....
Average of checks...	16.09	960	.....	16.09	12.11	57.11	38.02	41.09	37.16	55.74

*The actual yield of Oderbrucker barley and Emmer are given in all the different tests.

SOYBEANS

In this work eight varieties of soybeans and one variety of cowpeas were tested. The color of the beans is indicated in the first

column. The season of 1913 was a little short at both ends and yields were lower than usual at Wooster, as well as at other points in the state.

The two highest yielding varieties in Hamilton county were Mongol and Ohio 9035; Miami Co., Ohio 7496 and Ohio 9016; Paulding Co., Chestnut and Ohio 9100; Wooster, Ohio 9016 and Ohio 7496. Averaging the last four years' tests at Wooster the selections Ohio 9016 and Ohio 9035 lead. The latter selection is a little late in northern Ohio for such seasons as 1913.

Cowpeas have not proved as satisfactory producers of seed as soybeans. Their average yield has been much lower than the soybeans, while in some seasons they have failed entirely.

The yield of soybean straw in the Hamilton county test ranges from 1,630 lbs. per acre to 2,980 lbs. This straw has considerable value for feed and soil improvement.

TABLE X: Soybeans in variety test, Hamilton county, 1913

Variety	Color of beans	Actual yield per acre		Increase (+) or decrease (−)	Comparative yields of grain					
		Grain	Straw		Hamilton	Miami	Paulding	Wooster	Wooster 3-yr. av.	Wooster 4-yr. av.
		Bus.	Lbs.	Bus.	Bus.	Bus.	Bus.	Bus.	Bus.	Bus.
Check (Medium Green)	Green	14.83	2,710	.....	.....	.....	.....	.....	.....	.....
Ohio 9100 (Ito San)	Yellow	16.00	2,040	+1.45	15.35	12.81	22.38	20.83	21.79	19.80
Ohio 9035	Brown	19.67	2,620	+5.39	19.29	16.67	20.98	16.62	28.51	26.29
Check	.....	14.00	2,510	.....	.....	.....	.....	.....	.....	.....
Mongol	Yellow	19.50	2,980	+5.56	19.46	15.29	19.21	16.31	27.58	.....
Chestnut	Yellow	10.33	1,630	−3.56	10.34	16.93	28.49	20.41	27.79	24.65
Check	.....	13.83	2,420	.....	.....	.....	.....	.....	.....	.....
Ebony	Black	16.83	2,440	+2.61	16.51	15.62	20.34	18.07	24.47	21.93
Ohio 7496	Yellow	16.00	2,240	+1.39	15.29	20.26	19.17	21.35	29.25	25.98
Check	.....	15.00	2,650	.....	.....	.....	.....	.....	.....	.....
Ohio 9016	Yellow	15.17	1,650	+1.23	15.13	17.12	16.77	25.69	30.64	26.54
New Era Cowpeas	Mottled	5.33	2,380	.....	*5.33	8.67	.....	8.33	6.77	.....
Check	.....	11.83	2,390	.....	.....	.....	.....	.....	.....	.....
Average check plots.	.....	13.90	2,536	.....	13.90	15.81	13.60	17.91	25.83	22.84

*The actual yields of New Era Cowpeas are given.
Soybeans planted May 29, 1913.

SILAGE CROPS TEST

Six varieties of corn, two varieties of sorghum, and mixtures of corn and soybeans, and millet and soybeans, were grown in a quantitative test of crops for the silo. The crops were weighed up green as harvested Sept. 17. The Blue Ridge—a variety of corn from Virginia, was used as check, being grown upon four of the plots.

The two heaviest yielding plots were the Early Orange sorghum and the Eureka corn. While the average of the Blue Ridge check plots is slightly below these, one of the check plots exceeded both.

The planting of soybeans with the corn reduced the yield 1.79 ton per acre, though it is to be supposed that the quality would be improved somewhat. The mixture of millet and soybeans produced a low yield.

The five-year average yields of eight varieties of corn as grown at Wooster are appended for comparison. Anyone interested in further details of the latter test should write to the Experiment Station, Wooster, Ohio, for Bulletin 269.

TABLE XI: Silage crop tests, Hamilton county, 1913

Variety	Tons per acre
Check (Blue Ridge)	12.43
Connor's Prolific	12.12
Eureka	13.17
Blue Ridge corn and soybeans	10.63
Reid	9.02
Boone County White	11.04
Darke County Mammoth	10.68
Early Amber Sorghum	12.33
Early Orange Sorghum	13.18
Millet and soybeans	5.53

Planted May 20 and harvested September 17, 1913.

Silage corn tests at Wooster

Variety	Tons per acre 5-yr. average
Blue Ridge—Virginia	14.48
Hickory King—Virginia	13.64
Pike County White—Ohio (U. S. 77)	12.83
Boone County White—Maryland (U. S. 119)	12.94
Boone County White—Tennessee (U. S. 138)	13.90
Boone County White—Ohio	13.00
Darke County Mammoth—Ohio	11.01
Leaming—Ohio	9.54

FORAGE CROPS TEST

In Table XII are reported yields of green forage of soybeans planted in different ways; three varieties of cowpeas, and mixtures of the above legumes with millet.

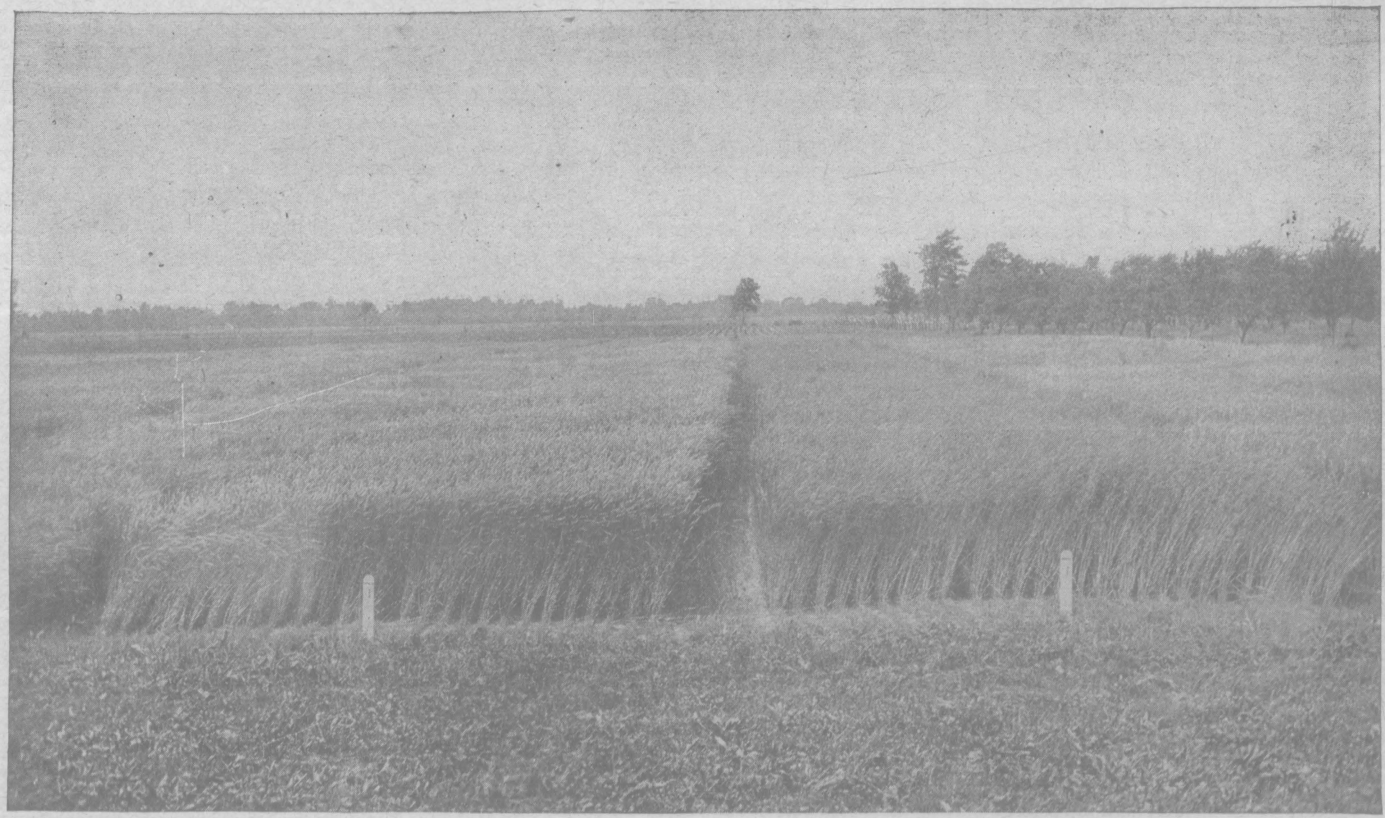
The soybeans planted in rows and cultivated, yielded slightly more forage than when drilled solid. Broadcasting the beans resulted in a much lower yield.

The cowpeas furnished more forage than the soybeans in each instance. The mixture of millet with soybeans and cowpeas resulted in a greatly reduced yield.

TABLE XII: Forage crops test. Hamilton county, 1913.

Variety	Method of seeding	Tons per acre actual yield
Check (Medium Green Soybeans)	Rows	5.35
Medium Green	Solid	5.15
Medium Green	Broadcast	3.60
Check	Rows	4.42
Clay cowpeas	"	6.62
Whippoorwill cowpeas	"	5.77
Check	"	4.25
Cowpeas and millet	"	3.70
Soybeans and millet	"	3.20
Check	"	5.10
Rape	"	*
Black cowpeas	"	6.00
Check	"	5.00
Average of checks	"	4.82

Planted May 29, 1913. Harvested September 17, 1913.
*Not harvested.



Paulding County Experiment Farm: Comparison of varieties of wheat, 1913

Paulding County Experiment Farm. An alfalfa party, 1913